Results:

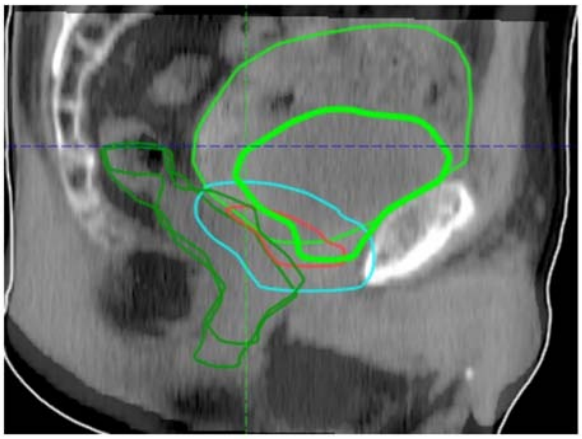

Figure 1. An example of a patient with large variation in bladder filling between planning CT (thin light green) and CBCT before a treatment fraction (thick light green). The planning-CT and CBCT are matched to bony anatomy. (Red =CTV, blue=PTV, dark green= rectum)

The bladder volumes varied widely both within each patient (see example in Fig. 1), between patients in the same group and between the groups.

The individual patient mean bladder volume varied from 79±23 to 269±90 ml in group 1 and between 64±19 to 309±110 ml in group 2.

Furthermore, there was no difference in the group mean bladder volume between the groups, 138±82 ml in group 1 and 150±92 ml in group 2 (p-value 0,59).

Conclusion: The findings indicate that the use of a strict bladder protocol is not superior to a comfortably filled bladder-regime to ensure a consistent bladder volume throughout the whole treatment course. The conclusion would be to let the patient prepare according to his own preference with a comfortably filled bladder. This could result in an easier patient setup due to a more relaxed patient. The impact of the wide variations in bladder volume on toxicity and dose distribution is further to be determined.

EP-1360

Comparing patient and physician-reported GI effects in locally advanced prostate cancer radiotherapy

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Purpose or Objective: To compare patient-reported outcomes (PROs) with physician-assessed outcomes (PAOs) on gastrointestinal (GI) dysfunction pre- and post-radiotherapy (RT) for locally advanced prostate cancer.

Material and Methods: Adverse GI effects were assessed in 80 subjects treated with intensity-modulated RT for locally advanced prostate cancer (78 Gy/56 Gy in 39 fractions to the prostate/pelvic lymph nodes) in 2011-2012. A study-specific PRO and CTCAE.v.3-based PAOs were completed pre- and post-RT (end, 3, 6, 12, and 24 m). This study focuses on the 18 (PROs) and 8 (PAOs) potentially RT-induced GI symptoms. Symptomatic subjects were considered as having PRO>Grade 1 and PAO>Grade 0 symptom severity. Relative risk ratios (RR) with related 95% confidence intervals (95%CI), and p-values (two-sided 5% significance level) were calculated for each symptom and follow-up time post-RT, with pre-RT symptom severity as the reference.

Results: Across all follow-up times, significant RRs were observed for in total 4/18 (RR: 2-25; p<0.001-0.02) PROs and 1/8 (RR: 2; p=0.0001-0.02) PAO (Table). Defecation urgency and Obstruction yielded the tightest 95%CI among the PROs, and Flatulence among the PAOs. The RR indicated that the PROs acknowledged both acute (12 symptoms) and late (3m: 5; 6m: 4; 12m: 7; 24m: 9 symptoms) RT-induced effects, and that the PAOs typically focused on acute rather than late effects (7 vs. 1-3 symptoms).

Table. Prevalence (%), relative risk ratio (RR), and 95% CI (ps0.05) at each follow-up time for each PRO (upper) and PAO (lower) symptom.

		End of RT N=79			3m post-RT N=79			6m post-RT N=80			12m post-RT N=77			24m post-RT N=74		
GI domain	**PRO**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**
Defecation urgency	Time to defer defecation	54	7	3-15	33	4	2-9	28	3	2-8	36	5	2-10	31	4	2-9
	Re-defecate<1h after last defecation	53	4	2-7	32	**2**	1-4									
	Forcing toilet visit	58	5	3-9	42	3	2-7	35	**3**	2-6	44	4	2-7	39	**3**	2-6
Fecal leakage	Liquid stools	25	3	1-8							25	3	1-7	20	3	1-6
	Solid stools															
	Protective pads use	15	24	2-400							12	19	1-310	12	19	1-320
	Nocturnal bowel movements	24	9	2-38												
	Soiling underwear										47	2	1-6	51	**2**	1-3
Obstruction	Incomplete evacuation	44	4	2-9	30	**3**	1-6	21	**2**	1-5	29	**3**	1-6	34	3	2-7
	Difficulty passing stools	13	20	1-340												
	Strain@defecation	27	**2**	1-5										27	**2**	1-5
Pain	@Defecation	22	6	2-18												
	Anal/rectal	25	3	1-6												
Stool content	Mucous	33	25	4-180	15	11	2-85	21	16	2-120	16	12	2-88	16	12	2-91
	Blood													11	8	1-63
	PAO	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**	**%**	**RR**	**95%CI**
Fecal leakage	Diarrhea	49	6	3-14	22	3	1-7									
	Incontinence	14	11	1-81	11	9	1-66				12	9	1-68			
Flatulence	Flatuelence	59	**2**	2-4	48	**2**	1-3	51	**2**	1-3	49	**2**	1-3	45	**2**	1-3
Pain	Abdominal	14	4	1-12												
	Bloating	18	5	1-15												
	Rectal	19	7	2-31												
Proctitis	Proctitis	13	5	1-22				13	5	1-21						

Conclusion: This study indicates that the number of symptoms and temporal patterns of RT-induced GI dysfunction in locally advanced prostate cancer depend on the applied assessment method. Physician-assessed outcomes according to CTCAE.v.3 captured acute effects, and in particular flatulence, whilst patient-reported outcomes captured both acute and late effects mainly related to defecation urgency and obstruction.

EP-1361

Prognostic factors in 1080 prostate cancer treated with radical external beam radiotherapy

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Purpose or Objective: The aim of this paper is to analyze, in prostate cancer patients treated with external beam radiotherapy (EBRT), the prognostic factors and their impact on the outcome in terms of Cancer Specific Overall Survival (CSOS), Biochemical Disease Free Survival (BDFS) and Clinical Disease Free Survival (CDFS).

Material and Methods: From October 1999 and March 2012 we treated by EBRT, 1080 prostate cancer patients. The mean age was 69.2 years. Pretreatment staging examinations were: digital rectal examination (DRE), pretreatment PSA (iPSA), abdominal ultrasound, abdominal CT scan and bone scan. The 87% of patients were classified as < cT2, 87% had a

Gleason Score (GS) < 7; the mean of iPSA was 18 ng/mL; the rate of clinical positive nodes was 1%. The ADT was prescribed to 69% of patients in neoadjuvant setting, 65% in concomitant setting and 34% in adjuvant setting. The mean follow-up was 81 months.

Results: The prognostic factors resulted statistically significant for all groups of patients at both, univariate and multivariate analysis, were the GS and the iPSA. In intermediate and high/very-high risk patients at multivariate analysis the prognostic factors for CSOS were: GS (p=0.001), positive lymph nodes on CT scan (p=0.05) and rectal preparation during the treatment (p=0.005); for the BDFS were: GS (p=0.008), patient risk classification (p=0.037), positive lymph nodes on CT scan (p=0.004), iPSA (p=0.001) and rectal/bladder preparation during the radiation treatment (p=0.001); for the CDFS were: number of positive core on biopsy (p=0.003), GS (p=0.0003), positive lymph nodes on CT scan (p=0.015), iPSA (p=0.0056) and RT dose (p=0.001). In high/very-high risk patient group at multivariate analysis the prognostic factors for CSOS were: biopsic Gleason Score, clinical/radiological stage, RT dose; for BDFS were: biopsic Gleason Score, adjuvant ADT, clinical/radiological stage, iPSA and RT dose>77.7 Gy; for CDFS were: biopsic Gleason Score, clinical/radiological stage, iPSA and RT dose>77.7 Gy.

Conclusion: Our results confirm several prognostic factors already described by literature, adding a new prognostic factor represented by the rectal/bladder preparation, generally known for its effect on toxicity but not yet on outcome. We believe that in the future a new nomogram should include also some therapeutic variables (as RT dose, RT technique and ADT), to help clinicians in decision-making.

EP-1362

Hypofractionated Simultaneous Integrated Boost IMRT in high risk prostate cancer – A novel approach

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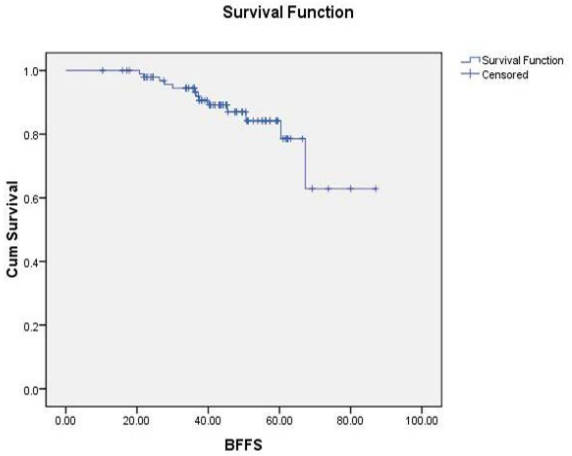
Purpose or Objective: We aim to evaluate the biochemical failure free survival (BFFS) and morbidity in high risk prostate cancer patients treated with long term androgen deprivation therapy (ADT) and hypofractionated Simultaneous Integrated Boost (SIB) IMRT. Recent advances in techniques enable us to deliver a higher dose of radiation to the prostate with limited dose to the adjacent rectum and bladder. Earlier studies have estimated prostate cancer to have low α/β of 1.5. Thus hypofractionated schedules in theory should confer better local control and cancer specific survival (CSS). Due to the long natural history of prostate cancer it becomes imperative to reduce rectal and bladder morbidity. Also BFFS has shown to be a predictor of CSS. Most of the studies with whole pelvic RT and long term ADT have used conventional fractionation schedules. Data on the benefit of hypofractionated SIB IMRT with long term ADT is limited.

Material and Methods: Retrospective analysis of 100 high risk prostate cancer patients treated between 2010-2012. All patients received SIB IMRT with 70Gy in 28 fractions to the prostate and seminal vesicles (if involved) and 50.4 Gy in 28 fractions to the pelvic nodal stations with neoadjuvant hormonal therapy for a duration of 3-6 months prior to radiation and adjuvant hormonal therapy for a duration of 24-36 months. They were followed up with serial PSA values and clinical examination. Biochemical failure was defined as serum PSA >nadir + 2 (ASTRO Phoenix definition). Acute rectal and bladder toxicity was scored with the RTOG toxicity criteria. Chronic rectal toxicity (proctitis) and chronic bladder toxicity (cystitis) were assessed using the CTCAE 4.0. Patients without biochemical failure were censored at last follow-up/last PSA check or death. BFFS was calculated by the Kaplan-Meier method.

Results: At a median follow up of 45 months (20-87 months), there were 13 cases of biochemical failure (13 %) . 5 year BFFS was 78.6% .There was no Grade 3 or 4 acute rectal or bladder toxicity . Chronic toxicity has been listed in the table below. Urethral stricture developed in 7 patients, of whom 6 had prior TURP showing significant correlation (6/15,p<0.001).



	Grade 2	Grade 3	Grade 4
Proctitis	12	2	0
Cystitis	7	0	0

Conclusion: This study therefore concludes that long term ADT and SIB IMRT provides a feasible alternative to conventional radiation therapy with good biochemical control and acceptable toxicity. Longer follow up of these patients would provide data on cancer specific survival and late morbidity.

EP-1363

Salvage SBRT in isolated nodal oligo recurrence from prostate cancer: UPMC San Pietro FBF experience

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Purpose or Objective: A status of disease with a limited number of distant lesions and a controlled primitive tumor is recently defined as oligo-recurrence: this group of patients is more favorable than the other with a high number of metastases and, in prostate cancer, often is represented by a single node.The objective of this retrospective study was to evaluate the acute and late toxicity rates, in salvage stereotactic body radiation therapy (SBRT) as a treatment modality in nodes oligo-recurrence, from prostate cancer.

Material and Methods: Between February 2013 and March 2015, 21 patients, for a total of 29 isolated lymph nodes from prostate cancer, were treated with SBRT, delivered with Truebeam Stx (Varian®), at UPMC San Pietro FBF radiotherapy center of Rome.The median age at primitive diagnoses was 65 (range 50-74) years. For the primary treatment, radical prostatectomy and postoperative irradiation, exclusive radiotherapy or prostatectomy was performed in 12 (57%) patients, 7 patients (33%) and 2 patients (10%), respectively. Median previous RT dose was 72 Gy/35 fractions.Median PSA at the time of recurrence was 2.04ng/ml.All patients with arising PSA underwent a [11C] choline-positron emission tomography before SBRT, in order to exclude other sites of disease. The SBRT dose varied from 27 to 30 Gy, in 1-5 daily fractions, according to the previous RT treatment for the primitive lesion or a close organ at risk. A daily cone-beam CT and X-ray (BRAINLAB ExacTrac®) scans were acquired before each treatment session, for every